

1) Personal Information

- Chrystal Starbird, Ph.D.
- University of North Carolina at Chapel Hill
Department of Biochemistry and Biophysics
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2) Education

- Postdoctoral Fellowship, Yale University, Pharmacology/Cancer Biology 8/2017-1/2023
- Ph.D., Vanderbilt University, August 2017, Chemical and Physical Biology 8/2011-8/2017
- B.S., University of North Carolina at Chapel Hill, August 2008, Biology 8/2006-8/2008
- A.S., Central Carolina Community College, May 2006, Science 8/2005-8/2006

3) Professional Experience – Employment History

- University of North Carolina at Chapel Hill, Assistant Professor, 2/2023-current
Primary Appointment: Department of Biochemistry and Biophysics
Affiliations: Lineberger Comprehensive Cancer Center
Program in Pathobiology and Translational Science
- University of North Carolina at Chapel Hill, Adjunct Assistant Professor, 7/2022-1/2023
- Yale University, Instructor, 1/2020-5/2020
- Yale University, Postdoctoral Fellow, 8/2011-8/2017
- Vanderbilt University, Instructor, Fall of 2013, 2014 and 2016
- Vanderbilt University, Graduate Research Assistant, 8/2011-8/2017
- UNC Chapel Hill, Predoctoral Research Scholar, 5/2010-8/2011
- Pfizer, Associate Biochemist, 5/2009-4/2010
- UNC Chapel Hill, Research Technician, 8/2008-5/2009
- UNC Chapel Hill, Undergraduate Research Assistant, 9/2007-8/2008
- UNC Chapel Hill, Lab Assistant, 10/2006-9/2007
- UNC Charlotte, Lab Assistant, 9/2001-5/2003

4) Honors

- Pair-Up Peer Imaging Cluster Award, American Society for Cell Biology, 2023
- Distinguished Service Award in DEI, Yale University, 2022
- Juneteenth Best Peer to Peer Mentor Postdoctoral Award, Vanderbilt University, 2022
- NIH/MOSAIC K99/R00 Scholar, 2022
- Intersections Science Fellows Symposium, Steering Committee, 2021
- Cell Rising Black Scientist Award, Cell Press, 2021

- Intersections Science Fellows Symposium, Associate, 2021
- Co-Chair, Yale Black Postdoctoral Association, 2020
- Board Member, National Black Postdoctoral Association, 2020
- Ruth L. Kirschstein National Research Service Award (NRSA), Postdoctoral Fellowship from the National Institute of General Medical Sciences
- Poster Judge Travel Award, ABRCMS, 2019
- Travel Grant and Platform Presentation, The Biophysical Society 60th Annual Meeting, 2016
- President, Vanderbilt Women in Science and Engineering, 2015
- Award for best talk, Vanderbilt Chemical and Physical Biology Retreat, 2014
- University Nomination for the Lindau Award, Vanderbilt University, 2014
- National Science Foundation Graduate Research Fellowship (NSF-GRFP), 2013
- Molecular Biophysics Training Grant, NIH T32 GM008320, Vanderbilt University, 2012
- Center for Structural Biology Stipend Award, Vanderbilt University, 2011
- Award for Best Overall Research Talk, PREP Symposium, 2011
- Postbaccalaureate Research Scholar, NIH R25 GM089569, UNC Chapel Hill, 2010
- Integrated Biomedical Research Training Program Scholar, UNC Chapel Hill, May 2007

5) Bibliography and products of scholarship

Published Refereed Papers/Articles:

1. Fernandez, A.*, Starbird, C.A.*, Davis-Reyes, B., Termini, C., Hinton, A.J., McCall, T. Evaluating diversity, equity and inclusion consulting requests. Trends in Molecular Medicine, Epub ahead of print <https://doi.org/10.1016/j.molmed.2022.06.006>
2. Davis-Reyes, B.*, Starbird, C.A.*, Fernandez, A., McCall, T., Hinton, A.J., Termini, C. Shadow mentoring: a cost-benefit review for reform. Trends in Cancer 8 (2022): 620-622
3. Shuler, H., Cazares, V., Marshall, A., Garza-Lopez, E., Hultman, R., Francis, T.K., Rolle, T., Byndloss, M.X., Starbird, C.A., Hicsasmaz, I., AshShareef, S., Neikirk, K., Johnson, P.E.C., Vue, Z., Beasley, H.K., Williams, A., Hinton, A.O. Intentional mentoring: maximizing the impact of underrepresented future scientists in the 21st century. Pathogens and Disease 79 (2021).
4. Starbird, C.A., Perry, N.A., Chen, Q., Berndt, S., Yamakawa, I., Loukachevitch, L.V., Limbrick, E.M., Bachmann, B.O., Iverson, T.M., McCulloch, K.M. The structure of the bifunctional Everninomicin biosynthetic enzyme EvdMO1 suggests independent activity of the fused methyltransferase-oxidase domains. Biochemistry 57 (2018): 6827-6837
5. Starbird, C.A., Tomasiak, T., Singh, P.K., Yankovskaya, V., Maklashina, E., Eisenbach, M., Cecchini, G., Iverson, T.M. New crystal forms of the integral membrane Escherichia coli quinol: fumarate reductase suggest that ligands control domain movement. Journal of Structural Biology 202 (2018): 100-104

6. Starbird, C.A., Maklashina, E., Sharma, P., Qualls-Histed, S., Cecchini, G., Iverson, T.M. Structural and biochemical analyses reveal insights into covalent flavinylation of the Escherichia coli Complex II homolog quinol:fumarate reductase. *Journal of Biological Chemistry* 292 (2017): 12921-12933
7. Maklashina, E., Rajagukguk, S., Starbird, C.A., McDonald, H., Koganitsky, A., Eisenbach, M.S., Iverson, T.M., Cecchini, G. Binding of the covalent flavin assembly factor to the flavoprotein subunit of Complex II. *Journal of Biological Chemistry* 291 (2016): 2904-2916
8. Immormino, R.M., Starbird, C.A., Silversmith, R.E., Bourret, R.B. Probing mechanistic similarities between response regulator signaling proteins and haloacid dehalogenase phosphatases. *Biochemistry* 22 (2015): 3514-3527
9. Starbird, C.A., Maklashina, E., Cecchini, G., Iverson, T.M. Flavoenzymes: covalent versus noncovalent. *Encyclopedia of Life Sciences* (2015): 1-11
10. Birmingham, W.A., Starbird, C.A., Panosian, T.D., Nannemann, D.P., Iverson, T.M., Bachmann, B.O. Bioretrosynthetic evolution of a didanosine biosynthetic pathway. *Nature Chemical Biology* 10 (2014): 392-399

Published Abstracts from Poster and Oral Presentations

1. Starbird, C.A. Analysis of structural similarities between TAM receptors and other cell surface molecules. *Journal of Biological Chemistry* 299 (2023): S570
2. Starbird, C.A., Maklashina, E., Rajagukguk, S., Cecchini, G., Iverson, T.M. Mechanisms of Assembly and Covalent Flavinylation in Complex II. *Biophysical Journal* 110 (2016): 191a

In process papers/Articles

1. Starbird, C.A., Walker, K., Stayrook, S., Ferguson, K. Evaluating TAM receptor extracellular oligomerization and structure. In preparation.
2. Fernandez, A., Davis-Reyes, B., Vang, C., Vue, Z., Neikirk, K., Spencer, E., Lambert, M., Garza-Lopez, E., Chiaramonte, D., Starbird, C.A., Smith, N., Hinton, A. Weaponizing predicaments and workplace toxicity to impeded minority progress in STEAMM. In preparation.
3. Stayrook, S., Bagchi, A., Xenaki, K.T., Starbird, C.A., Doukeridou, S., Roovers, R., Schmitz, K.R., van Bergen en Henegouwen, P., Ferguson, K. Structural Insights into the role and targeting of EGFRvIII. In preparation.
4. Starbird, C.A., Weinberg, Z., Munson, M. *Nature Cell Biology*. Invited Commentary.

Unpublished Oral Presentations

March 2024	Seminar Speaker, Vanderbilt University, Department of Molecular Physiology and Biophysics, Nashville, TN
February 2024	Invited Speaker, The Biophysical Society Annual Meeting, Philadelphia, PA
November 2023	Seminar Speaker, University of North Carolina at Asheville, Department of Biochemistry, Asheville, NC
July 2023	Invited Speaker, The Protein Society Annual Meeting, Boston, MA
June 2023	Invited Speaker, Protein Phosphorylation Meeting, FASEB, Steamboat Springs, CO
June 2023	Keynote Speaker, UNC Chapel Hill Postbaccalaureate Research Experience Program (PREP) Annual Symposium, Chapel Hill, NC
March 2023	Panelist, University of Washington, Reimagining Mentoring, HHMI Gilliam Series, Seattle, WA
March 2023	Selected Speaker, Annual Meeting of American Society for Biochemistry and Molecular Biology (ASBMB), Seattle, WA
March 2023	Selected Participant/Speaker, PAIR-UP Annual Conference, Tucson, AZ
March 2023	Invited Speaker, Cell Signaling Technologies, Boston, MA
March 2023	Invited Speaker, UMass Chan Medical School, Department of Biochemistry and Molecular Biotechnology, Worcester, MA
February 2023	Seminar Speaker, University of North Carolina at Chapel Hill, Chemical Biology Seminar Series, Chapel Hill, NC
January 2023	Seminar Speaker, University of North Carolina at Chapel Hill, Department of Microbiology and Immunology, Chapel Hill, NC
December 2022	Panelist, American Society of Cell Biology Annual Meeting, Washington, DC
June 2022	Seminar Speaker, University of North Carolina at Chapel Hill, Lineberger Comprehensive Cancer Center, Chapel Hill, NC
June 2022	Keynote Speaker, Yale Undergraduate Research Symposium, New Haven, CT
January 2022	Invited Speaker, University of Texas Southwestern, PROVIDES Seminar Series (<i>virtual</i>)
November 2021	Panelist, Yale University, Yale Ciencia Academy, (<i>virtual</i>)
November 2021	Featured Speaker and Panelist, Northwestern University, 12 th Annual Northwestern Biophysics Symposium, (<i>virtual</i>)
October 2021	Invited Speaker, Vanderbilt University, Discovery Science Emerging Scholars Lecture, (<i>virtual</i>)
September 2021	Invited speaker, Research Triangle High School, Durham, NC, (<i>virtual</i>)
February 2021	Invited speaker, University of North Carolina at Chapel Hill, Department of Biochemistry and Biophysics, (<i>virtual</i>)
January 2021	Panelist, Cell/Elsevier, Reflections on "Picture A Scientist", (<i>virtual</i>)
December 2020	Panelist, Yale School of Medicine, Office of Diversity, Equity and Inclusion, (<i>virtual</i>)
January 2020	Panelist, Yale University, Department of Molecular Biophysics and Biochemistry, New Haven, CT

2014 Invited speaker and Panelist, University of North Carolina at Chapel Hill, Mid-Atlantic IMSD/Prep Research Symposium, Chapel Hill, NC

Refereed other products of scholarship

1. Starbird, C.A. Transforming myself and academia for good. *Cell* 184 (2021): 851-853
Digital and other novel forms of scholarship
1. Feature, Arnold, C., Woolston, C. Uncertainty plagues junior researchers from underprivileged backgrounds amid pandemic. *Nature* 588 (2020): 355-357.
<https://www.nature.com/articles/d41586-020-03465-0>
2. Feature, Woolston, C. Uncertain prospects for postdoctoral researchers. *Nature* 588 (2020): 181-184. <https://www.nature.com/articles/d41586-020-03381-3>
3. Highlight, 1000 Inspiring Black Scientists in America, Cell Mentor.
<http://crosstalk.cell.com/blog/1000-inspiring-black-scientists-in-america>
4. Podcast: STEM Tea Podcast from Biotechniques, episode aired December 9, 2022
5. Podcast: NerDRx Podcast from Barkha Yadav-Samudrala, episode aired April 25, 2023

6) Teaching Activities

1. Lecture, Discussion section leader for 21 undergraduate students for Genes and Development course (Biol 103), Department of Genetics, Yale University, Spring 2020
2. Lecture, Graduate Teaching Assistant for 25 graduate students in Introduction to Structural Biology course (BCHMGS 8300), Department of Biochemistry, Vanderbilt University, Spring 2016
3. Continuing Education Lecture, led GRE course for 21-30 undergraduates from underrepresented groups interested in STEM sponsored by the School of Engineering and funded by Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP), Vanderbilt University, annually 2013-2016

Lab or Research Teaching Mentorships:

***Current Lab Members**

Undergraduate Students:

2023: Bryanna Shao, Summer Intern from Vanderbilt University

Graduate Students:

2023: Johnna Bingham*

2023: Skylar Grimsley*

2023: Drew Elliot Toomer

Postdoctoral Fellows:

2023-present: Dr. Keisha Hardeman*

Research Technicians:

2023: Maria Hincapie-Otero*

2023: Maria Camila Arango

7) Professional Service

To Discipline

2022-present Member, Minority Affairs Committee, American Society for Cell Biology

2023-present Member, NIH Advisory Committee to the Director Working Group on Re-envisioning NIH- Supported Postdoctoral Training

2023-present Co-Chair, Outreach and Communications Committee, American Society for Cell Biology

2023-present, Board of Directors, JEDI Awards, Life Science Editors

August 2023 Reviewed paper for *Aging Cell*

March 2023 Reviewed paper for *Advanced Biology*

Within UNC Chapel Hill

2023-present Faculty Mentor, Students in Training, Academia, Health & Research (STAHR) Mentorship Program

2023-present Faculty Mentor, BBSP First Year Group

2022-present Member, Advisory Committee, UNC PREP Program

2022-present Advisor, DEI Committee, Department of Biochemistry and Biophysics

2023 Advisor, UNC Postdoc Discussion Group, Department of Postdoctoral Affairs

Professional Society Memberships

Member, American Association for the Advancement of Science

Member, American Society for Cell Biology

Member, Biophysical Society

Member, Janeway Society

Member, The Protein Society

Member, The American Society for Biochemistry and Molecular Biology